UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,451	12/12/2003	Lexing Xie	MERL-1465	9682

22199 7590 04/06/2007		EXAMINER
MITSUBISHI ELECTRIC RESEARCH LABORATORIES, INC.		CUNNINGHAM, GREGORY F
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2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/734,451	XIE ET AL.
	Examiner	Art Unit	
	Greg F. Cunningham	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12 December 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-7_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-7_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _12/12/2007_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications of application received 12/12/2003.

2.   The disposition of the claims is as follows: claims 1 - 7 are pending in the application.

Claim 1 is the only independent claim.

3.   The group and/or Art Unit location of your application has changed. To aid in the

correlation of any papers for this application, all further correspondence should be directed to

Group Art Unit 2624 (effective 03/07). Please be sure to use the most current art unit number on

all correspondence to help us route your case and respond to you in a timely fashion.

4.   When making claim amendments, the applicant is encouraged to consider the references

in their entireties, including those portions that have not been cited by the examiner and their

equivalents as they may most broadly and appropriately apply to any particular anticipated claim

amendments.

Specification

5.   The disclosure is objected to because of the following informalities: On page 5 of the

specification, reference is given to Figure 2A in second line of paragraph [018]. Reference is also

made to Figures 2A-2B in fourth line of paragraph [020]. Yet the there are no Figures 2A nor 2B

labeled in the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et

al., (US 20020061136 A1), hereinafter Shibata, and further in view of Choi, (US 20020042793

A1).

A.   Shibata discloses claim 1, "A method for learning a structure of a video to detect events

in the video consistent with the structure, comprising:

selecting sets of features from the video [para. 0017 and 0109, corresponding to feature

amounts suitable to select a set of feature amounts];

updating a hierarchical statistical model for each set of features [para. 0031, Fig. 1 is a

schematic view showing a hierarchical model of video data; and para. 0052, see Fig. 1];

evaluating an information gain of the hierarchical statistical model [para. 0104,

corresponding to 'extracts a statistic representative value of an entire segment ... n-dimensional

vector ... histogram and a power spectrum are involved; para. 0105 - 0106];

filtering redundant features [para. 0101 corresponds to 'determines the extraction number

of features amounts by balancing maximization of the fidelity and minimization of the data

redundancy in the segment representation'];

updating the hierarchical statistical model based on the filtered features [para. 0104 -

0107, corresponding to 'method of forming a dissimilarity measurement criterion for a feature

amount representative of an extracted dynamic feature is based on the dissimilarity measurement

criterion for the static feature amount on which the dynamic feature amount is based.'];

applying a Bayesian information criteria to each model and feature set pair; and

rank ordering the model and feature set pairs to learn the structure and detect the events

in the video in an unsupervised manner" supra [as detailed].

However, Shibata does not appear to disclose "applying a Bayesian information

criteria to each model and feature set pair [Choi: Abstract, para. 0002 - 0005, 0023 – 0027, 0032,

0034, 0051, 0079, 0099, 0173, 0196 – 0197, corresponding to 'Bayesian self-organizing feature

maps (SOM)', and 'Bayesian statistical technique']; and

rank ordering the model and feature set pairs to learn the structure and detect the events in the

video in an unsupervised manner [Choi: Abstract, para. 0002 - 0005, 0023 – 0027, 0032, 0034,

0051, 0079, 0099, 0173, 0196 – 0197, corresponding to 'order-rank document clusters ... is a

type of an unsupervised learning']", but Choi does [as detailed].

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by

Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', and 'Bayesian

statistical technique' disclosed by Choi, and motivated to combine the teachings because Shibata

is directed toward audio visual signal processing of video data, and although Choi is directed

toward performing real-time document clustering for relevant documents in accordance with a

degree of semantic similarity , Choi would improve the accuracy of information retrieval via

performing real-time clustering for relevant information as revealed in para. 0002.

B.   Shibata and Choi disclose claim 2, "The method of claim 1, in which the hierarchical

statistical model uses Gaussian mixtures" supra for claim 1 and furthermore by Choi in para.

0029 corresponding to 'Gaussian distribution'.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by

Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', 'Bayesian

statistical technique' and 'Gaussian distribution' disclosed by Choi, and motivated to combine

the teachings because Shibata is directed toward audio visual signal processing of video data,

and although Choi is directed toward performing real-time document clustering for relevant

documents in accordance with a degree of semantic similarity , Choi would improve the

accuracy of information retrieval via performing real-time clustering for relevant information as

revealed in para. 0002.

(Examiner's note: Also see IDS reference: "Discovering Recurrent Events In Video Using

Unsupervised Methods", section (3.2 Movies Videos), 'Each state emits observations using

Gaussian mixture model (GMM)'.)

8.   Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et

al., (US 20020061136 A1), hereinafter Shibata, in view of Choi, (US 20020042793 A1), and

further in view of Lin et al., (US 7,076,102 B2), hereinafter Lin, or Ozer et al., (US

2004/0120581 A1), hereinafter Ozer, and/or Sterz, Walter et al., (DE 10122212 C1), hereinafter

Sterz.

A.   Shibata and Choi disclose claim 3, "The method of claim 1, in which the hierarchical

statistical model uses hidden Markov models" supra for claim 1. However they do not appear to

disclose "in which the hierarchical statistical model uses hidden Markov models". But Lin does

in col. 1, lns. 64-67, at 'For example, probabilistic techniques, such as Hidden Markov models

(HMMs) and Bayesian networks, have been used extensively to recognize complex motion

patterns and to learn and recognize human activities' or

  Ozer does in para. [0036] and [0066] corresponding to 'Hidden Markov Models'

  and/or Sterz does in front page corresponding to 'Hidden Markov Models'.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by

Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', and 'Bayesian

statistical technique' disclosed by Choi, and motivated to combine the teachings because Shibata

is directed toward audio visual signal processing of video data, and although Choi is directed

toward performing real-time document clustering for relevant documents in accordance with a

degree of semantic similarity , Choi would improve the accuracy of information retrieval via

performing real-time clustering for relevant information as revealed in para. 0002., coupled with

Hidden Markov Models disclosed by Lin, Ozer or Sterz and motivated to couple the teachings

because they all similarly classified as related art according to Current US and US Cross

Reference Classifications.

B.   Shibata, Choi, Lin or Ozer, and Sterz disclose claim 4, "The method of claim 3, in which

states of events in the video are modeled as low-level hidden Markov models in the hierarchical

hidden Markov model, and the events are modeled as a high-level Markov chain in the

hierarchical hidden Markov model" supra for claim 3, and furthermore by Lin in col. 1, lns. 64-

67 at 'For example, probabilistic techniques, such as Hidden Markov models (HMMs) and

Bayesian networks, have been used extensively to recognize complex motion patterns and to

learn and recognize human activities', wherein 'complex motion patterns' and 'human activities'

correspond to "high-level Markov chains" (i.e. state transitions: golf video -> tee shot -> pan ->

ball through air -> lands and rolls on fairway - specification para. 0003); or furthermore by Ozer

in para. [0036] and [0066] at 'movements' (of body object parts) determined by 'Hidden Markov

Models', wherein 'movements' (of body object parts) also corresponds to "high-level Markov

chains" (i.e. state transitions: golf video -> tee shot -> pan -> ball through air -> lands and rolls

on fairway - specification para. 0003); and

furthermore by Sterz in front page at 'Training model for pattern recognition, especially

Hidden-Markov model, involves defining displacement between related training patterns by

correlating patterns so that correlation is maximal' wherein 'displacement between related

training patterns' corresponds to "states of events in the video are modeled as low-level hidden

Markov models" (i.e. color schemes, texture patterns, or motion – specification para. 0003).

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by

Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', and 'Bayesian

statistical technique' disclosed by Choi, and motivated to combine the teachings because Shibata

is directed toward audio visual signal processing of video data, and although Choi is directed

toward performing real-time document clustering for relevant documents in accordance with a

degree of semantic similarity , Choi would improve the accuracy of information retrieval via

performing real-time clustering for relevant information as revealed in para. 0002., coupled with

Hidden Markov Models disclosed by Lin, Ozer or Sterz and motivated to couple the teachings

because they all similarly classified as related art according to Current US and US Cross

Reference Classifications.

9.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al., (US

20020061136 A1), hereinafter Shibata, in view of Choi, (US 20020042793 A1), and further in

view of Official notice.

A.   Shibata and Choi disclose claim 5, "The method of claim 1, in which the features include

dominant color ratios, motion intensity, a least-square estimates of camera translation, audio

volume, spectral roll-off, low-band energy, high-band energy, zero-crossing rate (ZCR)" supra

for claim 1. However, they do not appear to disclose, "in which the features include dominant

color ratios, motion intensity, a least-square estimates of camera translation, audio volume,

spectral roll-off, low-band energy, high-band energy, zero-crossing rate (ZCR)", but Official

notice is taken that the art is replete with features that include dominant color ratios, motion

intensity, a least-square estimates of camera translation, audio volume, spectral roll-off, low-

band energy, high-band energy, zero-crossing rate (ZCR).

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by

Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', and 'Bayesian

statistical technique' disclosed by Choi, and motivated to combine the teachings because Shibata

is directed toward audio visual signal processing of video data, and although Choi is directed

toward performing real-time document clustering for relevant documents in accordance with a

degree of semantic similarity , Choi would improve the accuracy of information retrieval via

performing real-time clustering for relevant information as revealed in para. 0002, and further

coupled with "features that include dominant color ratios, motion intensity, a least-square

estimates of camera translation, audio volume, spectral roll-off, low-band energy, high-band

energy, zero-crossing rate (ZCR)" disclosed by Official notice.

For instance see IDS reference: "Structure Analysis of Soccer Video With Hidden Markov

Models", first paragraph at 'dominant color ratio and motion intensity, based on the special

syntax and content characteristics of soccer videos'.

10.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al., (US

20020061136 A1), hereinafter Shibata, in view of Choi, (US 20020042793 A1), and further in

view of Bremer et al., (US 2005/0176057 A1), hereinafter Bremer.

A. .   Shibata and Choi disclose claim 6, "The method of claim 1, in which the features are

filtered with a Markov blanket" supra for claim 1. However, they do not appear to disclose, "in

which the features are filtered with a Markov blanket", but Bremer does in para. [0028] at

'Preferred feature selection algorithms include, but are not limited to, Forward or Backward

Floating, SVMs, Markov Blankets, Tree Based Methods with node discarding, Genetic

Algorithms, Regression-based methods, kernel-based methods, and filter -based methods.'

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', and 'Bayesian statistical technique' disclosed by Choi, and motivated to combine the teachings because Shibata is directed toward audio visual signal processing of video data, and although Choi is directed toward performing real-time document clustering for relevant documents in accordance with a degree of semantic similarity , Choi would improve the accuracy of information retrieval via performing real-time clustering for relevant information as revealed in para. 0002, and further coupled with Markov Blanket filter-based method disclosed by Bremer and motivated to couple the teachings because although the field of art seems unrelated it actually is related in the sense of feature selection as applied to a training set comprising patients and their associated values.

11.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al., (US 20020061136 A1), hereinafter Shibata, in view of Choi, (US 20020042793 A1), and further in view of Altschuler et al., (US 6,012,052), hereinafter Altschuler.

A.   Shibata and Choi disclose claim 7, "The method of claim 1, in which the evaluating is performed using expectation maximization and a Markov chain Monte Carlo method" supra for claim 1. However, they do not appear to disclose, "in which the evaluating is performed using expectation maximization and a Markov chain Monte Carlo method", but Altschuler does in col. 12, lns. 10-13 at 'Alternatively, the number of clusters specified may be averaged over or estimated using known statistical methods such as reversible jump Markov Chain Monte Carlo algorithms' and in col. 14, lns. 57-61 and in col. 16, lns. 10-19 at 'Expectation Maximization (or "EM") algorithm'.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply 'feature amounts, hierarchical model of video data, statistic

representative value of an entire segment and minimization of the data redundancy disclosed by

Shibata in combination with 'Bayesian self-organizing feature maps (SOM)', and 'Bayesian

statistical technique' disclosed by Choi, and motivated to combine the teachings because Shibata

is directed toward audio visual signal processing of video data, and although Choi is directed

toward performing real-time document clustering for relevant documents in accordance with a

degree of semantic similarity , Choi would improve the accuracy of information retrieval via

performing real-time clustering for relevant information as revealed in para. 0002, and further

coupled with 'Markov Chain Monte Carlo algorithms' and ''Expectation Maximization (or

"EM") algorithm' disclosed by Altschuler and motivated to couple the teachings because the

methods to pre-fetch resources and build resource link topology templates may also be used for

collaborative filtering as disclosed by Altschuler in col. 3, lns. 60-67.

Responses

12.   Responses to this action should be mailed to: Commissioner of Patents and Trademarks,
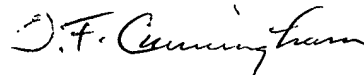
Washington, D.C. 20231.

Inquiries

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Gregory F. Cunningham whose telephone number is (571) 272-

7784.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matt Bella can be reached on (571) 272-7778. The Central FAX Number for the

organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory F. Cunningham
Examiner, Art Unit 2624

gfc

3/27/2007

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